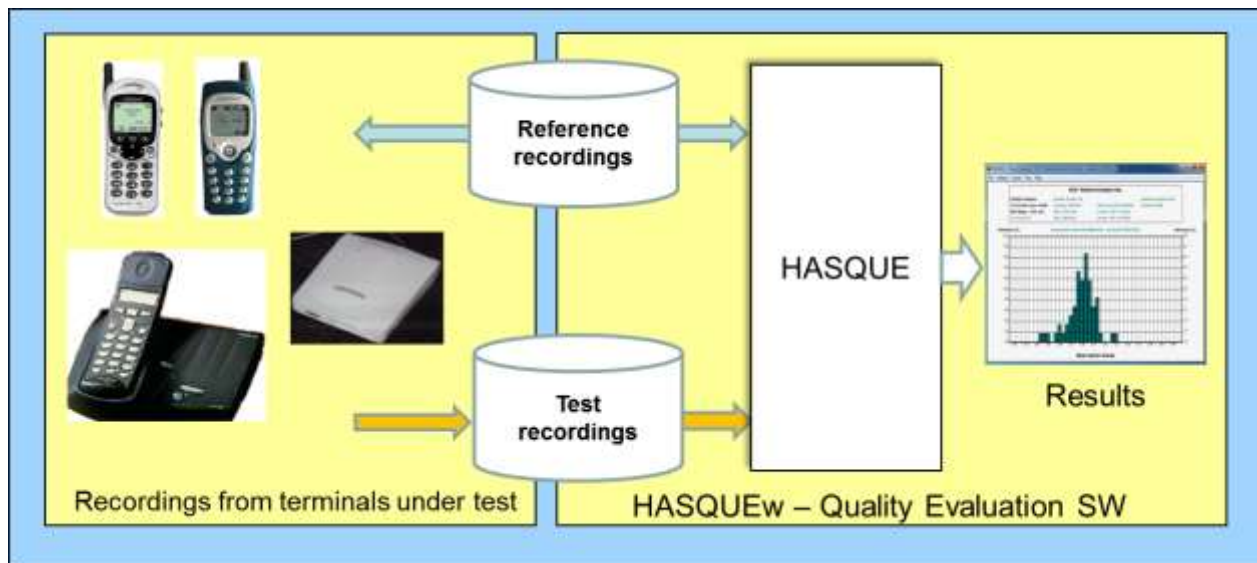
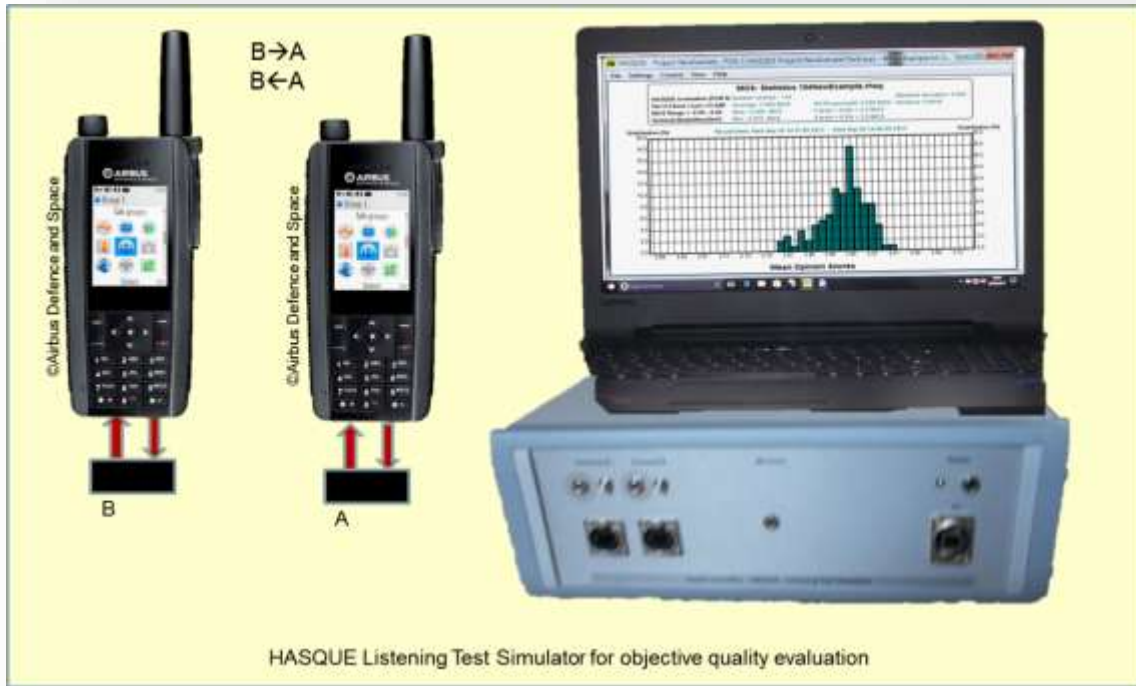


HASQUE Softwareupgrades



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General information

What are software upgrades?

Software upgrades include useful extensions such as additional measured value information, new graphic displays, extended test programs, automatic program controls or wizards, which were suggested both by Sound acoustics' own initiative and by customer requests. The respective innovations are described in detail in the associated release document.

Who Receives Software Upgrades?

Software upgrades are made available to licensees in a timely manner in connection with a software maintenance contract. Licensees should always use the latest software version to avoid misunderstandings in the event of queries.

How does a software upgrade work?

For each software release provided, the licensee receives a message about the availability of a new setup program on the Sound acoustics download portal, a password to unpack the encrypted setup program and a HASQUE_UpgradeInfo_de.pdf. Installation is as follows:

- Download: Save the setup program on the local computer and unpack it.
- Close all unnecessary programs.
- Start the setupHASQUE...exe with a double click.

The program can only be installed on the target computer by an administrator. Updating a licensed software is possible in a few minutes.

What is the impact of software upgrades?

Software upgrades provide the new features listed in the HASQUE_UpgradeInfo.

Updating licensed software does not affect settings or project files. Software upgrades do not affect the voice quality assessment results. The algorithm for this is stable and not subject to any changes.

What to do if it's stuck?

Problems or questions can be clarified by sending an email to help@sound-acoustics.eu.

In the event of discrepancies with certain test scenarios, the relevant reference and test cases should be sent by email with a brief explanation or, in the case of larger amounts of data, made available via a download link.

Sound acoustics treats every request and the data provided as strictly confidential.

What is to be considered?

Passwords for unpacking the new setup programs are confidential and must not be made accessible to third parties.

The use of the software is only permitted in connection with a valid license under strict compliance with the license agreements. The right of use applies to one PC (no multi-user license) and is not transferable.

Software Releases

Version 5.5 Upgrade 3 from 01/27/2016

- Optimization of load distribution (threads) when creating new projects.
- Graphic representation of the MOS values - extension of the numerical representation.
- Added additional messages with better distinction between warning and info.

Version 5.5 Upgrade 4 from 2/5/2016

- RST - File Import: Conversion to an independent thread with additional checks to detect missing files.
- Hardware test: extension of the test signals for periodic playback of wave files.

Version 5.5 Upgrade 5 from 02/22/2016

- Software adaptation to new interface requirements for correct adaptation to the measuring system.
- Hardware test: manual level adjustment via mouse wheel for interface adjustment of unknown terminals in the frequency range.
- Task Editor: Extended compiler test to check generated scripts.

Version 5.5 Upgrade 6 from 03/15/2016

- Hardware test: Extension of the signal generators with Bartlett burst for measurements on terminals with sinusoidal tone suppression to determine the distortion factor, signal-to-noise ratio and level in an existing radio connection.
- GUI: Mouse wheel controlled scaling of the time and level axes.

Version 5.5 Upgrade 7 from 04/18/2016

- Hardware test: Extension of the signal generators with butterfly noise signal for measurements on terminals to record the AGC properties in an existing radio connection.
- Automatic level adjustment: Implementation of a test version for determining the interface specification of various unknown end devices.
- Automatic scaling of the graphical display of PCM signals.

Version 5.6 from 05/29/2016

- Automatic level adjustment: Implementation of the release version for automatic level adjustment between the measuring system and end devices based on measurement results with different radio devices and control centers.
- Implementation of dialog boxes for logging the end device specification.
- Extension of the GUI for access to terminal parameters.

Version 5.7 from 06/07/2016

Optimization of the signal propagation time measurement for test signals with an extremely low signal-to-noise ratio.

Version 5.8 from 06/20/2016

- Extension of the measurement method for determining speech interruptions.

- Dialog box for determining the thresholds and the type of representation (percentage, time) for speech interruptions.
- Dialog box for determining statistical thresholds and percentile for calculation of speech interruption statistics.
- Extension of the GUI to display speech interruptions and a distribution function of the same.

Version 6.0 from 08/16/2016

- Extension of the end device description with product designation and product ID.
- Extension of wave format processing for non-Windows-compliant PCM data.
- Display of the time stamp of the PCM data to be evaluated in the GUI.

Version 6.1 from 08/29/2016

- Extension of the maximum recording time from 60 to 305 seconds.
- Noise adaptation that can be switched off to evaluate test samples with a continuous noise signal.
- Settings Options dialog box: Additional separate parameterization of speech interruption measurement for continuous noise signal.

Version 6.2 from 10/21/2016

- Graphical user interface (GUI): In order to be able to examine signal errors more precisely, the time resolution when moving the signals on the time axis has been increased to 1/1000 of the displayed time segment.
- Long file names are displayed in abbreviated form and only displayed in full when you point the mouse at them, in order to avoid being overwritten in the graphic.
- Playback of voice samples: The synchronization of the time bar, which shows the current position when playing back voice samples, has been improved.
- File list processing: The file list processing has been revised so that it does not run into the limit, especially during long test drives and thus also in offline mode up to 10000 files to be evaluated.
- The dialog box of the file list editor has been redesigned in order to be able to display long file names without any problems. The processing of file lists in offline mode has been divided into two menu items (creating a new list, editing existing lists) in order to achieve a better user interface.

Version 6.3 from 11/8/2016

The software extension was carried out in order to be able to carry out offline measurements with "truncated" recordings. In the case of real-time recordings, the recording time of test signals is always greater than the recording time of the reference signal used by the amount of the signal delay generated by a transmission device. To minimize imaging errors when using delayed speech samples, which are truncated to the length of the reference signal, the following software extensions have been implemented.

- Extension of the buffer filled with test data by the maximum possible runtime delay.
- GUI: Extension of the read function for graphical display of PCM signals.

For the expansion, heavily delayed speech samples (700ms) with encryption artifacts that were cut to short reference signals (2s) were used during development.

Version 6.4 from 02/02/2017

Extensions for the offline evaluation of non-causal test scenarios: Non-causal means that the received signal arrives before the transmitted reference signal. Such test scenarios can under no circumstances be generated by the HASQUE measurement system, but only if the test signals were generated independently of the transmission signal via an asynchronous recording control or manually with an incorrectly estimated signal propagation time. In order to also be able to evaluate such test signals in offline mode, the software was expanded with the following additional functions.

- Time Alignment Settings: Extension with input field "Min. Delay" for entering the maximum possible non-causal pre-delay of the reference signal. The value is 0 for standard measurements and can be adjusted to the test signals as a negative value in seconds.
- GUI: Extension of the graphical display of the runtime results and the runtime statistics (histogram) to display negative and positive signal runtimes.
- Correlation analysis for time alignment: Extension of the measurement range for negative signal delays.
- Playback – playback function: adjustment of the total or zoomed playback times in the case of a negative signal propagation time.

Version 6.5 from 05/30/2017

- Selection of the loudspeaker signals via GUI: In measuring mode, the transmission signal is transmitted via the monitor socket of the HASQUE hardware on one of the two stereo channels in order to be able to acoustically record the current transmission direction via this assignment. Any audio signal can be played back in offline mode. With the extension, there is also the option of listening to monaural transmission or reception signals via the PC loudspeaker interface or another freely selectable sound card. The desired signals are selected via the HASQUE GUI.
- Dynamic propagation time compensation: In mobile radio operation, propagation time fluctuations can occur during the measurement when there is a cell change, which can lead to measurement errors. The "Dynamic Delay Compensation" function corrects these dynamic runtime fluctuations, which means that the voice quality is measured correctly even when there is a cell change and actual interference such as artefacts caused by cell change can be better detected. The function can be activated via the settings if required.
- Display of the perceptible interference (Signed Perceptible Error): With the extension, it is possible to distinguish between signal cancellations and additional interference signals such as artefacts caused by cell changes. The display can also be switched to the known absolute value of the audible disturbance in order to be able to identify maximum disturbances more quickly. The extension enables faster error analysis and is suitable for network optimization, among other things.

Version 6.6 from 06/19/2017

- Hardware monitoring: The HASQUE hardware is monitored with the help of queries when the software is started. Hardware errors are evaluated and displayed in a more differentiated way with the software extension. Causes of errors such as a bad USB connection, defective relay switching, or errors in the sound card are reliably detected and reported.
- Compatibility with Windows 10: With the Windows 10 operating system, notifications are interpreted as missing files when the browser is opened. This leads to irritating messages from the operating system. The software has been modified in such a way that notices before opening the browser are displayed separately as independent messages.

- Correlation in extreme conditions: The correlation with subjective listening tests could be increased from 95 to 97% for 16 kHz samples with different and strong background noise. With 8 kHz samples, more precise results are achieved under difficult conditions (high distortion, low signal-to-noise ratio, strong signal interruptions, cell turnover interference).

Version 6.7 from 08/21/2017

- Terminal Interface Wizard With the help of the Terminal Interface Wizard, the necessary steps for a correct interface level adjustment on terminals are carried out automatically. A comparison using the wizard takes about 3 minutes and provides the necessary parameters for a correct quality assessment of unknown terminals. Benefits: Time savings with increased reliability and fewer opportunities for operator error.
- Level adjustment for limited speaking time (Speech Item Talk Time). The automatic level adjustment takes about 1 minute per speaking direction and requires an uninterrupted voice connection for the duration of the implementation. The new, optionally available function allows the level adjustment to be carried out even with shorter intervals for the set maximum speaking time. Advantages: Extended range of application of the measuring system for terminals with speech time limitation without the possibility of conversion.
- Storage and use of terminal properties: The selection option for storing or discarding terminal properties after level adaptation has been changed in order to achieve a better assignment of the interface parameters belonging to measurements or currently loaded.

Version 6.8 from 19.9.2017

- Terminal Interface Wizard - alternative test signal: A voice signal for automatic level adjustment is now available for end devices that cannot be adjusted correctly with the recommended Bartlett Burst. Note: The comparison with Bartlett burst is more accurate with a level deviation of 1 dB (MOS tolerance < 0.1) than with a voice signal with 5 dB (MOS tolerance approx. 0.1). Advantages: Alternative option for special end device properties.
- Terminal Interface Wizard - reception level adaptation: The volume level fluctuations that are possible with some terminals due to manual volume adjustment are compensated for with the help of a precise level measurement after manual adjustment at the push of a button. Advantage: Terminal-independent exact reception measurement level.
- Hardware test - display of hardware errors: Defective hardware or bad hardware connections are reported in the legend during the hardware test. Note: The automatic detection can only detect significant hardware errors, since "bad" end devices are also measured and therefore must not be identified as hardware errors. Advantage: Time savings when connecting, commissioning and troubleshooting terminals.
- Display of signal properties: The detection of special signal properties can provide helpful information for the evaluation. If the test signal differs greatly from the reference signal, cancellations or extraneous signals are possible. Extraneous signals can contain properties that are only caused by certain errors. For example, the detection of the siren can provide a different cause for a quality reduction than the detection of artefacts, or the repetition of the last signal blocks due to error concealment in the case of radio connection problems. The previous evaluation of speech interruptions has been expanded to include the detection of artefacts and has been prepared for the detection of alarm signals. Advantage: Simple error differentiation in end device tests.

Version 6.9 from 10/14/2017

Thread handling and dynamic memory management optimized.

Version 7.0 from 11/06/2017

- Graphic representation of the transfer function: The display of the transfer function for the previous spectra enables a better assessment of spectral impairments by the test object, since signal-dependent fluctuations in the spectral magnitude values are eliminated. Advantage: The impairment of the frequency response by a test object can be determined at a glance almost independently of the signal excitation.
- Result report for spreadsheet: The previous result report contained all available individual results with American decimal separators as a point. With the extension, the user can use the optional settings to individually specify which results are to be listed in the result report and which decimal separators are to be displayed and used. Advantage: Individual selection of results and extended adaptability to different spreadsheet programs.
- Optimization of thread safety: Time-critical calculations, which are processed as a thread in a separate process, have been secured against early access with an additional check. In rare cases, individual signal sections were not displayed in the PCM display due to early access to vectors. Advantage: Increased program stability

Version 8.0 from 03/31/2018

- Extended and optimized "View" menu: The new design of the "View" menu enables easier and better assignment to the desired displays. The extension of the menu relates to the additional menu items for displaying self-defined error types (see Programmable Error Tracer) and the display option for the correlation between reference and test signals. Self-defined error types can be displayed both in the overview with time and place assignment (when, where) and separately for each test case. The possibility of displaying the signal correlation enables an additional objective comparison between reference and test signals with corrected latency jitter.
- Selection of the results within a project via GUI: The results are selected with the help of a mouse click on the heading of the displayed representation, with the previous result files being opened and displayed with the left mouse button and subsequent result files being opened and displayed with the right mouse button. This enables a direct comparison between the results in a project for each type of representation. Result overviews and statistics, as well as individual results (time-frequency range, audible errors, signal correlation) of selected test cases can be directly compared with each other using the GUI-controlled result selection.
- Correlation analysis between reference and test signals: With the help of a new correlation analysis, the objective differences between reference and test signals can be proven, which cannot be exactly recorded due to the natural masking effects of "audible errors". Exactly the same signals deliver a correlation value of 100%. The percentage of the individual correlation values over the time axis means that the similarity of the signals can be excellently displayed and evaluated. Correlation fluctuations are used as an error property in the evaluation of classified errors and are significantly involved in a high detection rate. With access to the display of the signal correlation, dynamic runtime fluctuations and latency jitter are also corrected and displayed.

- Spectral analysis of zoomed areas: In order to be able to carry out individual tests on individual test cases more precisely in the frequency range, the spectra of the reference and test signal are also calculated and displayed separately for zoomed areas. When shifting the time axis of the zoomed area, the smallest fluctuations and differences in the frequency range can be viewed and evaluated.
- Programmable error tracer (definition and evaluation of your own error types): Signal errors can have different causes. Error classification enables the individual definition of an error type, such as interference from signal interruptions with weak reception, artefacts that occur from cell changes or interference signals from acoustic interference such as the siren of emergency vehicles. The error classification is carried out with the help of the signal properties of the type of error sought. The name of the error can be freely defined and is used in the graphics and in the menu items relevant for display and evaluation. The description of the properties of an error type is determined automatically using a scanner. Here, the user can zoom in on the searched error on the graphic display and accept it with the end button of the wizard opened with the scanning process for recording the error properties. A test button is available to verify the error detection, with which the error detection is displayed in the graphic. If necessary, error properties can also be manually adjusted to the limit values of other, non-scanned test cases via the editing fields. The error detection determines both the defined error and the duration of the error (duration in ms) separately for each test case. Own defined errors can be displayed both in the overall overview with chronological assignment and separately for each test case.

- Spectral analysis of zoomed areas: In order to be able to carry out individual tests on individual test cases more precisely in the frequency range, the spectra of the reference and test signal are also calculated and displayed separately for zoomed areas. When shifting the time axis of the zoomed area, the smallest fluctuations and differences in the frequency range can be viewed and evaluated.

Version 8.1 from 06/06/2018

- Automatic level adaptation

The level adjustment of the automatic level adaptation has been expanded by 13 dB due to new device specifications.

- Task editor compiler

Checking allowed sampling rates when creating new task lists. The additional check avoids real-time tests with impermissible recordings.

- Display of the terminal parameters used

Since then, the terminal parameters generated and used in real-time tests have only been reloaded and displayed when the HASQUE program is started.

Change : Update of the display to the respective terminal parameterization belonging to the measurement with direct access via the GUI to earlier results.

Terminal parameters are also displayed in the offline system if the measurement results were generated by real-time tests. "Offline" is displayed for purely offline simulations.

Version 8.2 from 07/09/2018

- Real-time measurements for different sample rates

For the evaluation of broadband transmission systems, the real-time operation for reference samples with sampling rates of 8, 16, 24 and 48 kHz has been extended. The sampling rate is automatically determined by the task script used in real-time operation, which means that operating errors are ruled out.

- Refinement of correlation analyses

When evaluating new recordings (6209 different test cases), individual measurement deviations could be determined in the correlation analysis, which could be eliminated with the help of adaptive correlation windows. Measurement deviations of the correlation analyzes have no influence on the quality measures, but do affect the error detection (error tracer) of self-defined errors (error classification).

- Documentation of individual errors

Extension of the software for creating vector graphics (*.emf) for the documentation of self-defined errors. The generated graphics are characterized by low memory requirements with optimal representation and are suitable for use in documents.

Version 8.3 from 04/29/2019

Online help with extended user guidance.

Version 8.4 from 06/26/2019

Advanced hardware detection of various audio devices

ASIO - signal streaming for Windows - operating systems up to W10

WASAPI - signal streaming for Windows - operating systems up to W10

Version 8.5 from 04/30/2020

ASIO - for automatic parameterization, fast calibration and low latency

WASAPI - signal streaming for device-independent monitoring and precise measurement

Advanced hardware detection of audio devices for reliable hardware replacement

Version 8.6 from 09/24/2020

Error classification, training and detection

Wizard for classifying and capturing defect properties

Optimization of the detection rate of self-classified error sources

Version 8.7 from 11/09/2020

Registration software for moving licenses

Version 8.8 from 02/26/2021

Extended error properties

Pre-trained error types

Ease of use and access to overview graphics

Version 8.9 from 06/30/2021

Extensions:

Programmable logging

image sequence control

Update of the help books

Version 9.0 from 08/17/2021

Extensions:

Extended COM port detection for new hardware configurations with regard to Windows 10 and later

Version 9.1 from 03/22/2022

Extensions:

Computer-assisted adjustment of the acceptance threshold to new assessment guidelines.

Version 9.2 from 05/15/2023

Extensions:

Extended hardware adaptation to new ASIO audio interface devices:

- ASIO driver detection and display
- Recognition and adaptation of the measurement software for 24/32-bit AD converters (ASIOSTInt32LSB format)
- Extended resolution of the latency display
- Output of the audio interface device data as a text file "ASIOprop.txt" in the current project folder via the key combination Ctrl+Alt+Shift+A for maintenance, error diagnosis or to hardware configuration check.

Version 10.2 from 05/30/2023

Extensions:

Automatic adaptations of the measurements software to different PTT relay cards:

- Implementation of a new DLL
- Verification and detection of the USB relay card built into the HASQUE hardware
- Monitoring and error reporting when using multiple or missing relay cards
- Conditional PTT control with command sets for the USB relay cards used in HASQUE

Version 11.2 from 07/28/23

Extensions:

- Maintenance Wizard
- Extensions of the help books
- Trial Software for 30 days
- Backward compatibility to Windows 7

Remark: This version needs a new license key.